CLAIMS

What is claimed:

1. A digital still camera for taking still images and having a panoramic mode for creating a panoramic image, the camera comprising:
   (a) a photographic imaging system for capturing a plurality of still photographic images used to form the panoramic image;
   (b) a transfer module for receiving the plurality of still photographic images to be automatically stitched together to automatically form the panoramic image;
   (c) a processor for processing the plurality of still photographic images to automatically form the panoramic image; and
   (d) a memory for storing at least one of: the panoramic image and the plurality of still photographic images.

2. A digital camera as claimed in claim 1, wherein the processor comprises a stitching engine to automatically form the panoramic image.

3. A digital camera as claimed in claim 1, wherein data of the plurality of still photographic images not used in the panoramic image is deleted upon storage of the panoramic image in the camera.

4. A digital camera as claimed in claim 1, wherein the transfer module comprises the processor.

5. A digital camera as claimed in claim 1, wherein the transfer module comprises the processor, the processor comprising a stitching engine to automatically form the panoramic image.

6. A digital camera as claimed in claim 1, wherein a first of the plurality of still photographic images is used to set colour and light related processing for all subsequent images of the plurality of images.

7. A digital camera as claimed in claim 6, wherein each of the plurality of still photographic images has an overlap region with a previous image of the plurality of still images.

8. A digital camera as claimed in claim 7, wherein the overlap region is determined by at least one of the group consisting of: user, pan speed, digital camera processing power, digital camera processing speed, digital camera shutter speed.

9. A digital camera as claimed in claim 7, wherein the overlap region is in the range of from 5% to 50%.

10. A digital camera as claimed in claim 6, wherein each of the plurality of subsequent images is tagged with a unique sequence number.

11. A system for forming a panoramic image, the system comprising:

    (a) a digital still camera for taking still images and having a panoramic mode for creating a panoramic image, the camera comprising a photographic imaging system for capturing a plurality of still photographic images used to form the panoramic image;

    (b) a transfer module for receiving the plurality of still photographic images to be automatically stitched together to form the panoramic image, the transfer module comprising a processor;

    (c) the processor being for automatically processing the plurality of still photographic images to automatically form the panoramic image, the processor comprising a stitching engine to automatically form the panoramic image; and

    (d) a memory for storing at least one of the panoramic image and the plurality of still photographic images.

12. A system as claimed in claim 11, wherein the transfer module is in a location selected from the group consisting of: the digital still camera, and a computer to which the plurality of still photographic images have been transfered from the digital still camera.

13. A system as claimed in claim 11, wherein data of the plurality of still photographic images not used in the panoramic image is deleted upon storage of the panoramic image.

14. A system as claimed in claim 11, wherein a first of the plurality of still photographic images is used to set colour and light related processing for all subsequent images of the plurality of images.

15. A system as claimed in claim 11, wherein each of the plurality of still photographic images has an overlap region with a previous image of the plurality of still images.

16. A system as claimed in claim 15, wherein the overlap region is determined by at least one of the group consisting of: user, pan speed, digital camera processing power, digital camera processing speed, digital camera shutter speed.

17. A system as claimed in claim 15, wherein the overlap region is in the range of from 5% to 50%.

18. A system as claimed in claim 14, wherein each of the plurality of subsequent images is tagged with a unique sequence number.

19. A method for producing a panoramic image using a digital still camera, the digital still camera comprising a photographic imaging system for capturing a plurality of still images to be used to form the panoramic image, the method comprising:
   (a) upon the digital still camera being set in a panoramic mode, a shutter release being operated, and the digital camera being panned, the digital camera capturing the plurality of still photographic images;
   (b) saving each of the plurality of still photographic images in a memory;
   (c) automatically processing the plurality of still photographic images in a transfer module to automatically form the panoramic image;
   (d) saving at least one of the panoramic image and the plurality of still photographic images in the memory.

20. A method as claimed in claim 19, wherein the processing step (c), takes place in the transfer module of the digital still camera.

21. A method as claimed in claim 19, wherein the processing (c) takes place in the transfer module of a computer to which the plurality of images are transferred from the digital still camera.

22. A method as claimed in claim 19, wherein a first of the plurality of still images is used to set colour and light related processing for all subsequent images of the plurality of images.

23. A method as claimed in claim 19, wherein each of the plurality of still images has an overlap region with a previous image of the plurality of still images.

24. A method as claimed in claim 23, wherein the overlap region is determined by at least one of the group consisting of: user, pan speed, digital still camera processing power, digital still camera processing speed, and digital still camera shutter speed.

25. A method as claimed in claim 20, wherein the transfer module comprises a stitching engine for stitching the plurality of still images into the panoramic image.

26. A method as claimed in claim 21, wherein the transfer module comprises a stitching engine for stitching the plurality of still images into the panoramic image.

27. A method as claimed in claim 23, wherein the overlap region is in the range of from 5% to 50%.

28. A method as claimed in claim 22, wherein each of the plurality of subsequent images is tagged with a unique sequence number.

29. A method as claimed in claim 19, wherein upon the panoramic image being formed and stored, the plurality of still photographic images are deleted from the memory.

30.   A method as claimed in claim 19, wherein the automatic processing includes determining camera orientation and pan direction.

31.   A method as claimed in claim 30, wherein camera orientation and pan direction are determined by:

(a)   selecting a plurality of suitable features in two adjacent images of the plurality of still photographic images, the adjacent images having an overlap region;

(b)   determining the extent of movement of the plurality of suitable features from a first of the adjacent images to a second of the adjacent images; and

(c)   summing the movements in two different directions.

32.   A method as claimed in claim 31, wherein if an absolute sum in a first direction is greater than an absolute sum in a second direction, the digital still camera is in a first orientation; and if the absolute sum in the first direction is not greater than the absolute sum in the second direction, the digital still camera is in a second orientation.

33.   A method as claimed in claim 32, wherein

(a)   for the first orientation, if the sum in the first direction is less than zero, the pan direction is to the right; and

(b)   for the second orientation, if the sum in the second direction is less than zero, the pan direction is to the left.

34.   A method for determining an orientation and pan direction of a digital still camera, the digital still camera having captured a plurality of still photographic images to be used to form a panoramic image, the method comprising:

(a)   selecting a plurality of suitable features in two adjacent images of the plurality of still photographic images, the adjacent images having an overlap region;

(b)   determining the extent of movement of the plurality of suitable features from a first of the adjacent images to a second of the adjacent images, and

(c)   summing the movements in two different directions.

35. A method as claimed in claim 34, wherein if an absolute sum in a first direction is greater than an absolute sum in a second direction, the digital still camera is in a first orientation; and if the absolute sum in the first direction is not greater than the absolute sum in the second direction, the digital still camera is in a second orientation.

36. A method as claimed in claim 35, wherein
    (a) for the first orientation, if the sum in the first direction is less than zero, the pan direction is to the right; and
    (b) for the second orientation, if the sum in the second direction is less than zero, the pan direction is to the left.

37. A method as claimed in claim 34, wherein the method is performed in a stitching engine in a transfer module in a location selected from the group consisting of: the digital camera, and a computer to which the plurality of still photographic images have been transferred from the digital still camera.

38. Computer usable medium comprising a computer program code configured to cause at least one processor to execute one or more functions for the performance of the method of claim 19.

39. Computer usable medium comprising a computer program code configured to cause at least one processor to execute one or more functions for the performance of the method of claim 34.